Claims

1. A process for producing anti-freeze peptides which comprises collecting one or more samples of bacteria from an aqueous low-temperature environment, culturing the bacteria and extracting proteins from the samples, testing the proteins for anti-freeze properties, selecting protein having anti-freeze properties, and producing the selected protein in amounts sufficient for use as an AFP food additive.

2. Pure bacterial cultures of *Marinomonas* species that generate anti-freeze proteins, said bacterial cultures showing at least 90% and preferably 95% homology in the 16S rRNA gene sequence with the corresponding sequence in the organism *Marinomonas protea* (SEQ ID no 1).

3. Pure bacterial cultures of *Pseudomonas* species that generate anti-freeze proteins, said bacterial cultures showing at least 90% and preferably at least 95% sequence homology in the 16S rRNA sequence with the gene sequence according to seq ID no 2.

4. Protein showing anti-freeze properties, obtained by the process of claim 1 ~~or isolated from a culture according to claim 2 or 3~~.

5. Protein according to claim 4 which is heat stable.

6. Protein showing anti-freeze activity and having a sequence homology in the N terminal amino acid

sequence of at least 75% to the amino acid sequence of sequence ID no 3.

7. Isoforms and derivatives of the amino acid sequence of SEQ ID no 3 having anti-freeze properties.

8. Nucleic acid sequence encoding the amino acid sequence of sequence ID no 3.

9. Food product comprising a protein showing anti-freeze properties according to ~~any of claims 4-7.~~ claim 4

10. Food product according to claim 9 wherein the food product is selected from the group comprising frozen vegetables and frozen confectionery such as ice-cream.

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